

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): A nuclide transmutation device comprising:

a structure body ~~that is made of palladium or a palladium alloy, or including a~~ hydrogen absorbing metal ~~other than palladium,~~ or a hydrogen absorbing alloy ~~other than a palladium alloy;~~

an absorption part in which one surface of said structure body is exposed to a deuterium gas at a predetermined pressure; [[and]]

a desorption part ~~that are disposed so as in which another surface of said structure body is exposed to the deuterium gas at a pressure lower than the predetermined pressure in said absorption part, said desorption part and said absorption part being positioned to surround~~ enclose said structure body ~~on the sides and form in~~ a closed space ~~that can be sealed by said structure body;~~

a high pressurization device ~~that produces a relatively high~~ configured to produce the predetermined pressure of deuterium at in said absorption part ~~on the side of the surface of said structure body,~~ said high pressurization device including a deuterium supply device configured to supply the deuterium gas to said absorbing part;

a low pressurization device ~~that produces a relatively low~~ configured to reduce the pressure of deuterium at in said desorption part ~~side on the other side of the surface of said structure body,~~ said low pressurization device including an exhaust gas device configured to evacuate said desorption part; and

a transmutation material binding device ~~that binds the~~ configured to bind a material that undergoes nuclide transmutation ~~[[onto]]~~ on said one surface of said structure body.

Claims 2-3 (canceled)

Claim 4 (currently amended): A nuclide transmutation device according to claim 1, wherein said transmutation material binding device comprises a transmutation material lamination device ~~that laminates~~ configured to laminate said material that undergoes nuclide transmutation ~~[[onto]]~~ on said one surface of said structure body.

Claim 5 (currently amended): A nuclide transmutation device according to claim 1, wherein said transmutation material binding device ~~provides~~ includes a transmutation material supply device ~~that supplies~~ configured to supply said material that undergoes nuclide transmutation to said absorption part, and ~~exposes~~ expose said one surface of said structure body to a gas or liquid that includes said material that undergoes the nuclide transmutation.

Claim 6 (currently amended): A nuclide transmutation device according to claim 1, wherein said structure body ~~provides from one surface to the other surface in order~~ includes:

a base material ~~that is made of palladium or a palladium alloy, or~~ including a hydrogen absorbing metal ~~other than palladium~~, or a hydrogen absorbing alloy ~~other than a palladium alloy~~;

a mixed layer ~~that is formed on the surface of~~ said base material and comprises ~~palladium or a palladium alloy, or~~ a hydrogen absorbing metal ~~other than palladium~~ or a hydrogen absorbing alloy ~~other than a palladium alloy~~, and a material having a low work function that allows emission of electrons (~~CaO in the embodiments~~); and

a surface layer ~~that is formed on the surface of~~ said mixed layer and comprises ~~palladium or a palladium alloy, or~~ a hydrogen absorbing metal ~~other than palladium~~ or a hydrogen absorbing alloy ~~other than a palladium alloy~~.

Claims 7-9 (canceled)

Claim 10 (new): A nuclide transmutation device according to claim 1, wherein the transmutation material includes at least one of Cs, C, Sr, and Na.

Claim 11 (new): A nuclide transmutation device according to claim 1, further comprising a heater configured to heat the structure body.

Claim 12 (new): A nuclide transmutation device according to claim 1, wherein the structure body comprises a substrate including Pd, a mixed layer formed on the substrate and including Pd and a material having a work function equal to or less than 3 eV, and a layer formed on the mixed layer and including Pd.

Claim 13 (new): A nuclide transmutation device according to claim 12, wherein the mixed layer comprises layers including CaO and layers including Pd that are laminated alternately.

Claim 14 (new): A nuclide transmutation device according to claim 1, wherein the absorption part comprises an absorption chamber, the desorption part comprises a radiation chamber, the high pressurization device comprises a deuterium tank configured to supply the deuterium gas into the absorption chamber, and the low pressurization device comprises a vacuum pump configured to maintain an interior of the radiation chamber in a vacuum state.

Claim 15 (new): A nuclide transmutation device according to claim 1, wherein said structure body comprises palladium or a palladium alloy.

Claim 16 (new): A nuclide transmutation device comprising:
a structure body which includes a hydrogen absorbing metal or a hydrogen absorbing alloy and has one surface on which a material that undergoes nuclide transmutation is provided;

an absorption part in which said one surface of said structure body is exposed to a deuterium gas at a predetermined pressure;

a desorption part in which another surface of said structure body is exposed to the deuterium gas at a pressure lower than the predetermined pressure in said absorption part, said desorption part and said absorption part being positioned to enclose said structure body in a closed space sealed by said structure body;

a high pressurization device configured to produce the predetermined pressure in said absorption part, said high pressurization device including a deuterium supply device configured to supply the deuterium gas to said absorbing part; and

a low pressurization device configured to reduce the pressure in said desorption part, said low pressurization device including an exhaust gas device configured to evacuate said desorption part.

Application No. 09/981,983
Reply to Office Action of October 28, 2003

IN THE DRAWINGS

The attached sheet of drawings includes changes to Figs. 13 and 14. This sheet, which includes Figs. 13 and 14, replaces the original sheet including Figs. 13 and 14.

Attachment: Replacement Sheet (1)